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ABSTRACT

This report summarizes the activities at the Institute for Communication Research over the past year in three major areas: (1) communication technology, (2) international communication, and (3) health communication. It also describes other research areas in the Institute; dissertations, papers, and publications of Institute members; and Institute publications, staff, visiting scholars, and sources of financial support. (DAG)

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ANNUAL REPORT

1976-1977

Stanford University
Stanford, California 94305

December 1977

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INTRODUCTION

The first annual report of Stanford's Institute for Communication Research covered activities of the 1957-1958 year. In this twentieth season of the annual report, we find evidence of both continuity and change in the Institute's activities.

There is continuity in the Institute's conviction that communication is a catalyst of social change. Under its two directors, Wilbur Schramm and Nathan Maccoby, the Institute has chosen a path of applied research to make communication systems more effective and affordable in national development as well as education, health care, and the provision of social services. Although basic research has been conducted at the Institute by staff and graduate students, the record of annual reports shows that a typical Institute project takes place in the field, whether the field is an American town or a village in the Third World.

There is change in the communication technologies that challenge us in each decade. The educational television systems that the Institute studied in the 1950's are now basic communication infrastructures around the world. The satellite and computer systems now under study at the Institute will reach their maturity in the 1980's and later.

The Institute for Communication Research was founded in 1955 as the interdisciplinary research and doctoral training arm of the Department of Communication in Stanford's School of Humanities and Sciences. Sometime in the coming year we will graduate our 100th Ph. D. in Communication Research. We have also provided M. A. -level training for a number of students, chiefly communication scholars from developing countries, and participate in the training programs of other departments by offering a popular "communication minor" for Ph. D. students in education, business, engineering, etc.

This year's annual report has major sections on communication technology, international communication, and health communication. Research is also underway in other areas, as indicated by the Table of Contents.

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COMMUNICATION TECHNOLOGY

Communication Technology and Public Policy

The past year has seen increasing evidence of change in communication and information processing technology. Computer information systems are becoming more widely and inexpensively available. Computer communication networks are expanding services with user charges independent of distance. Communication satellite technology is permitting the exploration and development of new services in both developed and developing countries. Home computers and video recording devices are achieving consumer acceptance. Communication satellite interconnection of cable television systems, especially for pay television, is spurring the growth of cable television. Newspapers are in the late stages of conversion to computerized production techniques. Many communication policy issues are raised by these technological changes and their economic implications. The convergence of computer and communication technology is making it difficult for the Federal Communications Commission to distinguish between regulated and unregulated services, and between monopoly and competitive services. The communication policy issues are no longer just narrow technical issues to be resolved at the FCC. The national economic and social implications are such that the

Congress is addressing them in its revision of the Communications Act of 1934 and the executive branch is reorganizing the federal agency structure for addressing such issues.

At Stanford, the Institute for Communication Research has maintained its involvement in communication technology and public policy issues. Edwin Parker gave a plenary session address at the annual meeting of the American Society for Information Science in Chicago in September of 1977 on the topic of "Telecommunication Policy and Information Services" in which the policy implications of the coming competition between IBM and AT&T were discussed. The battle is expected to be joined in the early 1980's when IBM's subsidiary Satellite Business Systems begins communication service on its own satellite, providing end-to-end communication service that is not dependent on AT&T. The advantage of competition will be that new information services (and the networks to make them available) will be developed. The potential for ecologically sound economic growth is considerable, but there are risks that gaps between rich and poor will be widened as prices drop for competitive services to the affluent and the poor pay more for the monopoly telephone service.

In August of 1977 Parker gave a plenary session address to the biennial meeting of the Library Association of Australia in Hobart, Tasmania, on the topic "Toward National Information Policies".

The economic aspects of information policies were discussed. He presented economic analyses and arguments indicating that increased national expenditures on information services at current levels of labor intensivity may be counterproductive from the perspective of the larger national economy, but that investment in improved information technology permitting lower unit costs for information services could have a positive impact, permitting significant economic growth per unit of energy consumed.

Parker is a presidential appointee to the Advisory Committee for the White House Conference on Libraries and Information Service, to be held in the fall of 1979 after a series of preparatory State conferences. He is chairman of one of the subcommittees dealing with policy issues. At Stanford, Parker is a member of a Task Force chaired by Provost William Miller to examine the future of libraries at Stanford in the period 1980 to 2000.

During the summer and fall of 1977 Parker served as a consultant on communication satellite policy to both the Office of Science and Technology Policy in the White House and to the Agency for International Development (AID). He was an "expert witness" for the Consumer Association of Canada in hearings before the Canadian equivalent of the FCC, on the proposed merger of Telesat (the Canadian satellite company) with the Trans-Canada Telephone System, which is dominated by Bell Canada.

Parker is increasingly turning his attention to the potential of communication technologies, including communication satellites, for implementing labor-intensive human-development strategies to improve the quality of life in rural areas of less developed countries. His hypothesis concerning communication technology and development was argued in an invited paper presented at the Australia and New Zealand Association for the Advancement of Science in Melbourne in September 1977. The paper was titled "The economic and social development potential of communication technologies". An edited version of the paper is scheduled to appear in the Journal of Communication.

In February 1977 Parker traveled to Guatemala and Nicaragua on behalf of AID to prepare recommendations for communication technology to support rural health projects in both countries. Two-way radio services linking health paraprofessionals in remote communities with medical supervisors were proposed.

Parker and Hornik are co-principal investigators on a new Institute contract with AID that began in the fall of 1977 to examine AID policy with respect to communication technology utilization for development. The project also includes an analysis of training needs and opportunities. Parker is also principal investigator for a subcontract with the Academy for Educational Development under an AID contract to provide training seminars, planning support and technical assistance to developing countries interested in communication projects.

Communication Technology Experiments

Parker collaborated with Ken Down, Assistant Dean of the Stanford Engineering Schcol, in directing a Stanford-Carleton curriculum sharing experiment. In that project involving Stanford University, Carleton University in Ottawa, Canada, and the NASA-Ames Research Center, the experimental Communication Technology Satellite (CTS) was used to offer Stanford engineering courses for academic credit at Carleton and Carleton engineering courses for credit at Stanford. NASA-Ames provided technical support, including technology for video compression that permitted video signals to be transmitted in a significantly smaller channel capacity than would normally be required. Communication Ph. D. students Sharon Strover and Teresa Odden provided evaluation reports based on research conducted as part of the project.

Parker and Down also collaborated in the presentation of a two-day telecolloquium on June 9 and 10, 1977. The telecolloquium on the "Social Potential of Communication Satellites" was jointly sponsored by Stanford University and the University of Montreal in Montreal, Canada. Utilizing the two-way video capability of the CTS satellite, speakers and audience were present at both Stanford and Montreal sites. Everett Rogers was the Stanford moderator, Jeff Charles of the Institute was the Stanford rapporteur, and Sharon Strover the evaluator. Both Charles and Strover prepared

reports on the telecolloquium, which demonstrated the viability of satellite communication for such conferences and made possible the exchange of information and experiences on the subject of satellites.

Ron Rice, working with Parker, developed a prototype computer-based nutrition information system as part of National Science Foundation sponsored grant for study of consumer information systems. The nutrition information system utilizes Stanford's SPIRES (Stanford Public Information Retrieval System), a computer system that was originally developed under Parker's direction as an Institute research project in the late 1960's and early 1970's and has continued in regular operational use at Stanford since that time. A research report on the project is in preparation.

Related Dissertations and Reports

Marc Porat completed his Ph. D. dissertation, entitled the "Information Economy". His work at Stanford was supported by an NSF grant (to Donald Dunn of the Engineering School) in which Parker was a participant. Porat continued and extended his dissertation research at the U.S. Department of Commerce which has issued a nine volume report on his work. Copies of THE INFORMATION ECONOMY are available from the Superintendent of Documents, U.S. Goverment Printing Office, Washington, D.C. 20402 (stock number 003-000-0512-7). Parker and Jim Rosse of the Economics Department were Porat's major advisors.

Jesse Caton completed his Ph. D. dissertation, "The Integrated Computer Database as a Medium for the Management and Access of Textual Information". Caton developed, demonstrated, and evaluated a computer-based technique for multi-media editing and publishing. His system, called SPIDOC (for SPIRES-based document preparation). provides extended computer facilities for writers and editors of documents and permits a single version of the computer content to be used either for on-line computerized display of the document or for production of off-line printed versions. The system is in use by the Stanford Center for Information Processing for preparation and production of user's manuals for computer systems. Parker was his major advisor.

Michel Guite completed his Ph. D. dissertation, "Requiem for Rabbit Ears: Cable Television Policy in Canada". It is a thorough analysis of all facets of cable television policy in Canada, including original research contributions to the economic analysis of communication satellite distribution of video for cable in Canada, and the potential of pay-television (not yet offered in Canada). Since cable television is more widespread in Canada than in any other nation of the world, including the U.S., the analysis of cable television policy in Canada provided insights relevant beyond Canadian borders. Parker was the major advisor.

The final report on the Institute's research for National Iranian Radio-Television (NIRT) was submitted in December 1976. It was titled "Information systems: Final report on Contract NIRT 1: Assistance in Telecommunications Planning". Co-authors were Parker, Carlos Sartori, Henry Breitrose and Elspeth Elliot.

Computer Assistance in Information Work

William Paisley and Matilda Butler have been investigating the role of the computer in facilitating information tasks that are now performed without computer assistance. According to their conceptual framework, information workers' perceptual/cognitive processes are to be accelerated or augmented by the computer. A long-term goal is to delegate information tasks entirely to the computer.

Information work (the production, distribution, transformation, storage, retrieval, and use of information) is analyzed in terms of information tasks that are more generic than each type of information work itself. Sequences of information tasks are often named after the focal tasks that they contain. For example, "decision making" is an information task in itself, but it also names a sequence of tasks that includes formulating a problem, determing information needs, searching for information, selecting and processing relevant information, comparing alternative decisions, and making the decision.

Cybernetic and psychological theories help to identify twelve perceptual/cognitive processes that underlie information tasks: scanning, fixating, feature extracting, decoding, comparing, deciding, inducing, deducing, retrieving, selecting, transforming, and producing. Functions that the computer may perform to accelerate, augment, and delegate these processes are exemplified by displaying analyzing, simulating, editing, etc.

In the late 1970's, computer R&D can increasingly shift from system-oriented problems (e.g., memory size, processing speed) to user-oriented problems (e.g., establishing an optimal interface for each type of information work). Priorities can be set for computer R&D and the implementation of new functions by estimating aggregate user benefits (number of users benefiting X average benefit per user) and aggregate costs. The communication functions shared by most users of computer-based information systems (displaying, commanding, inputting, editing, outputting, and transmitting) have high priority according to this estimation procedure.

It is neither necessary nor desirable that totally new information systems be designed in the next decade to accommodate these functions. Four types of existing systems (information storage and retrieval, teleconference, instruction, decision support) should be regarded as extendable with respect to new functions. Since existing systems permit low-cost evaluation of new functions, the sequel

to this study should be a program of acceleration, augmentation, and delegation experiments using existing systems.

Paisley's and Butler's research in this area has been supported by the Division of Science Information, National Science Foundation.

INTERNATIONAL COMMUNICATION

Communication and National Development

The Institute's program of research and technical assistance on communication for development in Third World nations is now well into its second decade. From an early emphasis on educational television systems, the program on communication and development has broadened in several directions, as these research summaries indicate:

Ivory Coast. The Ivory Coast has probably the largest instructional television (ITV) systems, now in its seventh year of operations, for the schooling of primary grades in the Third World. This year the first graduates of primary school will begin the traditional secondary course. The primary students studying with television will number over 400,000; they are enrolled in almost eighty percent of primary schools in the country.

Since 1974 the Ministry of Education has developed a series of television programs designed primarily for the rural illiterate adult population. These weekly or semi-weekly programs deal with subjects such as pure water, agricultural cooperatives, improved agricultural practices, and rural savings cooperatives. The broadcasts are usually shown in rural primary schools, where adults congregate for viewing and for discussion afterwards.

The Institute, through AID funding, is collaborating with the Evaluation Unit of the Ivorian Ministry of Education to evaluate (1) the cost effectiveness of the primary ITV system, its production and alternatives for the secondary system in the Ivory Coast; (2) an administrative history of the first two years of the out-of-school broadcasts; (3) the impact of the televised series on the rural villager; (4) a four-village study of the village animation for adult, out-of-school television; (5) a comparative study of the Ivory Coast adult TV system and three other rural adult media systems in Tanzania, Guatemala, and the Dominican Republic; (6) cost study of the adult TV system. A final report which is due at the end of this year will summarize the findings of all of these and other research reports that have been done during the past two and one-half years.

Members of the Institute collaborating on the work are Emile McAnany, Mireille Etaix, Frans Lenglet, Pierre Seya, Faustin Yao and Joseph Yao. Robert Hornik and Peter Spain are providing technical advice. Annie Benveniste completed her part of the research in 1976 and has returned to her university in Paris.

Guatemala. The Guatemalan government, first through its National Secretariat for Economic Planning, Human Resources Sector, and subsequently through the National Board for Out-of-School Education, has planned and taken the first steps toward implementing a major project in out-of-school education. It is

designed to reach rural adults with programs of information and education responding to their needs. The project seeks to maximize the effectiveness of a large number of already operating rural education programs, by recruiting a staff of monitors to organize learning activities at the village level and by supplementing existing programs with a delivery system built around radio and other media.

Stanford University's help was requested in the early stages of project planning; in that phase our role was to help Guatemalan staff in researching the needs, characteristics, and interests of the target population. The planning research was to result in specific recommendations for the design of the project delivery system, as well as influence the choice of content objectives.

Beginning in the summer of 1975, under UNICEF funding, and since November of 1975 under an AID contract through the Academy for Educational Development, Stanford has maintained a continuous field presence in Guatemala, as well as support staff at the Institute involved in this project. Along with the Guatemalan staff, we have moved through a number of research/planning/initiation phases. That movement has not been without its obstacles.

In earlier phases of our participation in the project, under Jeremiah O'Sullivan's field directorship (Hornik and McAnany are principal investigators), Stanford had been involved in basic planning research, completing both a review of existing projects and a

comprehensive audience survey (Noreene Janus was involved in this earlier phase). Both of these activities resulted in reports published by the project. This planning research was designed to produce recommendations for the structure of many aspects of the project, and in particular for the delivery system. O'Sullivan, Hornik, McAnany and Eduardo Contreras conducted a week-long seminar for the project operational staff designed to examine delivery system alternatives.

In the present year Stanford's subcontract was renewed. In October Contreras joined O'Sullivan in full-time residence in Guatemala. O'Sullivan was asked to serve as advisor in the design of the delivery systems; in that role he completed a report reviewing basic assumptions applicable to communication systems, and considering alternatives. O'Sullivan also remained a close advisor of the field staff and was involved in the recruitment and training of the first 200 monitors. Before his return to Stanford in June, O'Sullivan also completed the gathering of data and a first report of a major research project. He addressed an issue central to all projects attempting to provide information and education to the rural poor: can the successful provision of such information (and supplemental resources in the form of credit) affect the living standard of people with small amounts of land. At this time he is completing the analysis of this data, with the expectation that it will serve the needs of the project, as well as enable him to complete his doctoral thesis.

Contreras was appointed advisor to the Evaluation section of the project. With his counterparts, he helped develop an operating feedback system. This system was designed to enable the field staff to be aware of the operation of its widely-flung networks of monitors and meeting groups, and was developed in extensive consultation with field personnel. Contreras also helped to train the Evaluation staff in basic evaluation concepts, and is now completing an evaluation manual to be used by the project after he returns to Stanford in early October.

The project itself has been slow to reach its planned potential. It has recruited and trained a large number of monitors who have or are continuing to try to organize local learning groups. While basic curricula have been prepared in a number of subjects, it has been a difficult struggle to realize fully developed learning materials and have them delivered to the learning groups on a regular basis. Under its present design, the project continues to depend on technical experts from other ministries to deliver presentations in person.

This has proved to be a major constraint on project success. As elections approach, it will be seen whether the project will build sufficient momentum so as to resolve its major weaknesses before it loses its political mandate.

Publication and Conference Activities

The two-volume collection of radio projects called Radio for Education and Development: Case Studies, was published in May by the Education Department of the World Bank; this contains fourteen major chapters and was edited by Spain, McAnany, and Dean T. Jamison of the World Bank. Now in the second printing, this collection is available from the World Bank. A synthetic volume, drawing on the experience in all these cases as well as other radio applications, has been prepared by McAnany and Jamison, and is scheduled for publication by Sage Publications in Beverly Hills. This volume also contains an extensive annotated bibliography prepared by Spain.

McAnany prepared a paper on the reasons to utilize educational technology, and presented it at the Conference on Educational Technology in Santiago de Compostela, Spain, in February; this will be published soon in Educational Broadcasting International. With Thomas Cook, of Northwestern University, McAnany spoke on the implications of evaluation research in the United States as applied to Latin America, at the Conference on the Measurement of Impact of Nutrition and Related Health Programs in Latin America, in Panama in August 1977. He has also recently completed a four-nation comparative study of rural education projects, working with Frans Lenglet of the School of Education. McAnany

and Spain prepared a paper on formative evaluation for presentation at the Conference on Rural Development and Distance Learning in Devon, England, in September 1977.

Spain attended the Asociacion Latinoamericana de Educacion Radiofonica general assembly in Costa Rica in October 1976. His paper given there on values and their role in economics is being published in Chasqui and in an expanded version in the Revista del Centro de Estudios Educativos. Spain's analysis of the past studies and future research needs in communication technology transfer will appear in the Revista de Tecnologia Educativa.

John Mayo and Spain published their report on the July 1976 Stanford Conference on Communication Policy and Planning for Education and Development, in March; it is available through the Institute. The conclusions are being prepared for publication in Educational Broadcasting International.

Everett Rogers and others prepared a bibliography of the diffusion of innovations which includes 2,730 items, all of which are held at Stanford in the Institute.

In "Models of Communication and the Passing of the Dominant Paradigm of Development", Rogers traces the parallel shift (1) from linear to convergence models of communication, and (2) from the dominant paradigm of development to alternative pathways to development. The article will be published in the Journal of Communication.

In a report of the Institute, Rogers and Udai Parcek set forth a research approach to investigating the acceptability of innovations (illustrated by the case of new contraceptives), as a new aspect of research on diffusion of innovations. The report was entitled, "Acceptability of Fertility Regulating Methods: A Synthesis of Research Literature."

The application of communication network analysis to the diffusion of family planning innovations in Korean villages was the topic of a chapter Rogers prepared. Entitled "Network Analysis of the Diffusion of Family Innovations" it will be printed in Social Networks: Surveys, Advances and Commentaries.

For the volume edited by Wilbur Schramm and Daniel Lerner, Communication and Change: The Last Ten Years - and the Next, Rogers contributed two chapters. In "The Passing of the Dominant Paradigm - Reflections on Diffusion Research", he considered changes in diffusion research in developing countries as thinking about development has changed. In "Where Are We in Understanding the Diffusion of Innovations", he summarized what we have learned from research on diffusion of innovations as it bears on communication for development.

In another Institute report, Extending the Agricultural Extension Model, Rogers and others describe the original model of extension

in the U.S., and evaluate its extensions (1) to agriculture and family planning in developing nations and (2) to non-governmental agencies in the U.S.

"Network Analysis of the Diffusion of Innovations: Family Planning in Korean Villages" was prepared by Rogers for the volume, Essays in Honor of Wilbur Schramm. It seeks to expand our understanding of the multi-step flow of communication from an analysis of family planning diffusion in Korea.

Rogers considered the need for different communication research methods than those applied in the past for Latin America, in a paper presented at the Conference of Communication Research for Rural Development in Latin America at Cali, Colombia. It was entitled "New Possibilities in Research Methods: Implications for Communication Research in Latin America."

John Mayo (at Florida State University since September 1977) is preparing a document to be published by UNESCO for the use of communication planners. "Evaluation Strategies for Communication Planning" discusses the roles that evaluation can play in policy definition and system design, implementation, and system maintenance, and in assessment of impact. It stresses how evaluation can serve allocation decisions at particular points in project development.

Hornik combined a review of existing research on the effects of home television use in school achievement with a treatment of that issue based on previously-gathered El Salvador data in "Television Access and the Slowing of Cognitive Growth". The junior high school students exhibited a small, but consistently negative, effect of television exposure on growth in reading skills. No effects on subject achievement were apparent. The article will be published in the American Educational Research Journal.

Together with other members of Stanford's Evaluation Consortium, Hornik is working toward a book on evaluation. Departing from much of the established literature, the early drafts emphasize the political character of evaluation and the need to consider multiple constituencies in developing evaluations. They stress the need to emphasize external validity in evaluative design, since most evaluation is more useful for future projects than for projects actually evaluated.

Luis Antonio de Noriega has expanded the manuscript of his M. A. project, completed in June 1977, into book form. His volume, dealing with the uses of entertainment television programming for educational/development purposes in developing nations, will be published (in Spanish) in early 1978. de Noriega is a staff member of TELEVISA, the Mexican television network.

The AID Training Program

In the past year, there were twelve Ph. D. and nineteen M. A. students enrolled in the International Communication program and, of these thirty-one, twenty-one were supported at least in part, by grant funds. This enrollment, which does not include students from other university departments who enroll in international communication courses, represents a five-fold increase over the average enrollment level that existed prior to the grant.

Nine of the original M. A. students recruited for the program in 1974-75 have successfully completed all the requirements for their degrees. Of the nine, seven have returned to their home countries, and one has been admitted to Stanford University's doctoral program. Of the thirteen students admitted to the M. A. program in the second year (1975-76), nine have completed all the degree requirements. Six of these nine have returned to their home countries and the other three entered the Ph. D. program. Of the seven students of the third class (1976-77), one has completed the program and returned to his country. The others are engaged in field research, or in completing the writing of their M. A. theses. Finally, nine new M. A. students have been recruited for the coming year: two from Mexico, two from Chile, one each from India, Tanzania, Nigeria, Colombia, and Iran.

Of the twelve Ph. D. students associated with the International Communication program, seven received some support from the grant. Two spent the year in Guatemala, carrying on dissertation research as part of the field evaluation currently being conducted in Guatemala on communication and adult education activities. One student has been exploring research opportunities in Bolivia with the national association of radio schools there.

A total of nine graduate-level courses were taught by program personnel in the past year. All but two of these courses were directly related to goals of the grant and designed specifically for students in the program. The international course offerings included communication theory, research and evaluation methods, and the diffusion of innovations, as well as special topics related to the applied use of communication technology in development. All told, these courses enrolled a total of 113 students.

Field research experience continued to be an important component of the M. A. and Ph. D. programs. As mentioned above, two advanced doctoral students conducted field work on adult education in rural Guatemala, while 11 M. A. students worked on various projects in their home countries. In the judgment of the program's leaders, field training (whether in the U. S. or abroad) is an indispensable complement to classroom work because it demands that students adjust their theoretical training to the needs and constraints of grassroots development programs.

Two short-term seminars were conducted in the past year, one at Stanford and one overseas. Peter Spain organized, with the assistance of many Stanford colleagues, a week-long session for a four-person communication team from Egypt. It aimed to give an overview of relevant communication-for-development experience that might soon be applied to Egypt. Jorge Schnitman provided a one-month course at the Centro Interamericano de Estudios Superiores para Periodismo en America Latina (CIESPAL) in Quito, Ecuador; this course dealt with the political and structural contexts of communication work. Stanford University expects to continue participating in short-term, regional training activities of this kind; it is expected that funding for them will continue to come predominantly from non-grant sources.

M. A. Theses

Theses in completion of the M. A. requirements were submitted by eleven students during the fourth grant year. A list of the students and their topics follows:

Tatiana Galvan	Political Aspects of Newspaper Coverage in Mexico
Nanthawan Suchato	The Relation of Violent Television to Violent Attitudes and Behavior Among Schoolchildren in Thailand
Nasrin Ameri	Mass-Media Use Among the Turkish Minority in Iran

Annie Benveniste	Village Studies of TV Classes in Ivory Coast
Maria Tarango	An Educational Needs Assessment: Peralta College for Non-traditional Study
Mark Vermilion	A Problematic Evaluation Design for the National Program for the Formation of Human Resources in Honduras
Herbert Koeneke	The Use of TV for Development: The Venezuelan Case
Joseph Yu	A Channel Study Among the Farmers in Hong Kong
Fernando Morett	Communication Networks Among Urban Squatters in Monterrey, Mexico
Eduardo Navas	The Social Context of Illiteracy in Guatemala
Alberto Montoya	An Exploration of the Structural Dimensions of Communication Among Mexican Peasants

Conference on the Communication Effects Gap

A conference on national and international implications of the "sommunication effects gap" was held in October 1976, with 33 scholars in attendance.

Since an important article by Phillip Tichenor and his associates in 1970, much research and conceptual attention has focused on the topic of the "knowledge gap", also known as the "communication effects gap". The essential notion is that a communication intervention (which may consist of a mass communication campaign, a

particular message or program, or exposure to a particular channel) widens the difference between two (or more) audience segments in some effects variable (knowledge, attitude, or behavior).

Most past communication research was aimed at determining effects, but usually these effects were "absolute" effects (that is, whether an individual gains increased knowledge by exposure to a particular message), rather than "relative" effects (such as whether lower-income children learn less from watching "Sesame Street" than do middle-income children, or whether smaller farmers adopt fewer agricultural innovations from viewing television programs than do larger farmers). So the communication effects gap suggests the research question of whether a communication intervention has relatively greater effects on certain audience segments than on others, rather than the previous research question as to whether any effects occurred.

The social significance of the gaps issue is heightened by the dominant concern today in development with socio-economic equality. Has real development occurred in a nation if the socio-economic gap between rural and urban people, between larger and smaller farmers, etc. is increased in the process? How do the mass media contribute to this widening gap, or how could they close it? The problem is also of great concern to U.S. field researchers. For example, how can the gap of knowledge be decreased by community intervention?

Until about 1970, the rate of national development was usually indexed as the percentage increase in the gross national product (or per capita income) per year. Development agencies mainly pursued the goal of national economic growth, by promoting industrialization and urbanization. There was little concern for equity in the distribution of the socio-economic benefits of development; at best it was hoped that such benefits would "trickle down" from the more elite segments to the weaker sections of the population.

This dominant paradigm of development began to shift about 1970. Thereafter, greater equality in the distribution of information, socio-economic benefits, and so forth became a major goal of most national development programs and of most bi-national and international development agencies. This new emphasis in development led to the realization that villagers and urban poor should be the priority audience for development programs, and, more generally, that the closing of socio-economic gaps by bringing up the lagging sectors was the main task in many nations. Accordingly, integrated rural development programs were launched in many countries in Latin America, Africa, and Asia; these programs stressed popular participation in self-development planning and execution, and decentralization of certain of these activities to the village level.

In short, the nature of development was redefined to focus on the closing of rich-poor, urban-rural, and male-female gaps.

1. Exactly what is the communication effects gap?
2. Why is the gap important?
3. Does the gap happen? Does it continue through time?
4. Why does/doesn't the gap occur? For instance, does it become more likely when "big" communication technology is involved?
5. How can one prevent/facilitate the gap? What is the cost of doing so?
6. What type of future research is needed on the gaps issue?
7. What are the most appropriate methodologies for studying the gaps issue?
8. What are the implications of the gap for communication policy and for research, especially in the fields of communication for development, and children's television?
9. How does the gaps issue bear on concerns about equality versus freedom?

Much of the discussion at the conference centered on the present conceptualization of the gaps issue, and how it might be improved. The following conclusions were reached:

1. The degree to which a gap occurs moves across different media/channels, and across various messages (for example, a ceiling effect can narrow a gap that would otherwise occur for a particular message).

2. Most past research on the gaps issue has been conducted in the U.S., with a study in Mexico and in India.
3. The main effect of communication that has been studied in gaps research has been knowledge.
4. The gaps issue has helped bring social structural factors into communication research.
5. The gap ought to be considered a dependent variable and thus be the object of research as to why and how it occurs or does not occur.

Other Activities of the International Communication Program

1. Consultations

(a) Nepal

Mayo and Hornik returned to Nepal in November 1976 to complete final project development work for the radio-based teacher-training project. Intensive negotiation with Nepalese government officials led to a basic agreement on many elements of the program, and fairly detailed implementation plans were developed. Since that visit a final project paper has been prepared and approved within AID, and it is expected the project will begin in the coming year. Utilizing daily radio programs, accompanying textbooks, and summer seminars, the project seeks to train a large number of presently untrained primary-school teachers.

(b) AIDSAT demonstrations

In the course of bringing the ATS-6 satellite back from its location over India so that it could be used in the Western Hemisphere, AID mounted demonstrations in more than 20 countries, utilizing the satellite. In each case, films and two-way video discussion with a panel of experts in Washington emphasized the utility of communication technology for disaster control, natural resources detection, and for education and information. At each foreign site, specialists in natural-resource detection satellites, and in communication for development were available to consult with interested persons. Hornik served as a specialist in the second category in Argentina and in Ecuador.

(c) Central American regional project development

In June, Hornik traveled to each of the Central American capitals with Dennis Foote of the Academy for Educational Development on an AIDSAT follow-up mission. They talked to each AID mission concerning possible communication projects, and the potential for a further satellite-based demonstration.

(d) Two-way radio for health-service delivery in Central America

In June, Ed Parker traveled to Nicaragua and Guatemala for AID with Richard Martin of Michigan State University. They examined projects for each country which proposed to utilize two-way radio for the improvement of the delivery of health services to rural people. Both projects are going forward with experimental versions.

(e) Egypt's center of communication and development

Everett M. Rogers, along with Dr. Clifford Block of AID/ Washington, served as a consultant to the AID mission in Cairo in May-June 1977, in order to determine the feasibility of a proposed center of Communication for Development in Egypt. The center will be located in the Ministry of Information and Culture, and is intended to bring together in one organization all government efforts to use communication for development (in agriculture, health, family planning, and education). The center has been approved in principle to begin during 1978.

(f) Family planning in Mexico

Everett M. Rogers served as a consultant to the National Family Planning Agency in Mexico in July 1977. He reviewed the various communication components of the family-planning program, and suggested types of needed communication research on family planning.

(g) Nicaragua conference

In September 1976, Peter Spain coordinated an AID-sponsored conference in Managua, Nicaragua on "The Use of Radio as an Instructional Tool in Primary School." The purpose of the conference was to study the Radio Mathematics Project, which is being carried out in nearby Masaya, Nicaragua. Included in the conference were fifteen radio producers from eleven developing countries

who shared their related experiences and became acquainted with similar project methods and results. Members of the conference also evaluated the practicality and feasibility of the Masaya project's methods and procedures. The project is funded by AID and directed by the Institute for Mathematical Studies in the Social Sciences at Stanford.

(h) Brazil case study

Emile McAnany spent three weeks in Brazil reviewing the accomplishments of a radio and television project for the rural primary schools of Rio Grande do Norte. The project, called SACI, was originated by the National Space Research Institute in about 1971 and was originally designed as part of a satellite demonstration. Although brief use of the ATS-F satellite occurred, the main effort was to create radio and television programs for rural primary teachers and students. McAnany and his Brazilian collaborator, Dr. Joao Baptista Oliveira, will write up a case study of the project for AID.

(i) Peru planning

At the request of Peru's Instituto Nacional de Teleducacion (INTE) and USAID? Peru, John Mayo joined Dr. Stanley D. Handleman (TAB?EHR) in Lima for four days of planning meetings with Peruvian and local AID officials with the aim of defining an agenda, potential participant list, and set of outcomes for a

seminar and potential follow-up activities related to the expanded use of communication for initial education in the Sierra Sur region of Peru.

(j) Diffusion Survey Analysis

In order to determine which mass media and interpersonal communication channels are more effective for poorer villages or developing nations, Larry Shore, Emile McAnany, and Everett Rogers are re-analyzing data from Rogers' surveys of about 4,000 villages in Brazil, Nigeria, and India. These data were originally gathered in 1968 as part of an AID-supported project, but they were not analyzed originally with a view to the issue of equity in development.

(k) Technology Transfer Seminar

In preparation for making a proposal to study the decision process affecting communication-technology transfer, Rogers, Mayo, and Spain met regularly with several graduate students throughout the fall and winter. The seminar reviewed the literature on technology transfer in general and on communication technology transfer in particular. In preparation for launching this study, contact has been established with knowledgeable colleagues at the Institute of Development studies in Sussex, England, and Chuo University, Tokyo, Japan.

2. Conferences

Emile McAnany gave two seminars on the uses of educational technology in El Salvador and Mexico at the annual meeting of the Educational Research Units of the National Spanish Universities held in Santiago de Compostela in February. These seminars were summarized in a paper for the conference.

McAnany also participated in a seminar on Broadcasting and National Development at the Institute of Development Studies at the University of Sussex in England in August. The twenty-six participants were drawn from twenty-one countries, primarily from the Middle East and Africa. Most participants were broadcasters from their countries and the seminar concentrated on providing them with planning tools for better use of the broadcast medium for national development goals. McAnany discussed the Ivory Coast experience with using television for providing information to rural adults. McAnany and Spain attended a conference on Distance Learning and Rural Development sponsored by the International Extension College in England. The participants came from a large number of Third World countries in Africa, Asia, and Latin America. Radio farm forums, radio study campaigns, and radio schools were all discussed in the light of possible further application of principles that came from the distance-learning tradition more common to formal education.

McAnany also participated in the Conference on the Measurement of the Impact of Nutrition and Related Health Programs in Latin America sponsored by AID and the Pan American Health Organization in Panama in August. He collaborated on a paper with Thomas Cook of Northwestern University on evaluation experiences in the U. S. and their possible application to Latin America. The conference discussed the role of evaluation in helping to guide policy on nutrition programs in Latin America.

Hornik and McAnany attended the AID/UNESCO-sponsored conference considering issues in a cost methodology for educational technology projects. Held in Washington, D. C. in April, the conference was organized by EDUTEL and ICEM. In particular, it treated problems such as ways to report costs to make them maximally useful to new projects, directions for standardization of costing techniques, and problems of comparison outcomes of investment alternatives.

In October, Spain attended a meeting of the Executive Board of the Asociacion Latinoamericana de Educacion Radiofonica (ALER) in San Jose, Costa Rica, and presented a paper dealing with financing efforts of the radio schools. ALER, with over thirty members throughout Latin America, represents the principal private efforts in radio-based education in the continent.

The goals of this meeting included treatment of evaluation questions and efforts at self-financing. In addition to the ALER Board, participants came from UNESCO's Santiago office and regional research groups such as DESAL and SEDECOS of Santiago and the Instituto de Investigaciones Socioeconomicas of Tegucigalpa.

3. SPIRES Development Communication File -- SPIRES DEVCOM

The Institute's development communication file is now available on SPIRES. This computer-based cataloguing system provides many combinations to search rapidly for documents that fit the user's particular interest. With this capability, a user can look under more than one category at the same time. For example, rather than looking in a card catalogue under "radio" and then sifting through the listed entries for a specific application of radio, the user, through SPIRES, can search under 'radio' . . . in 'Latin America' . . . for 'adults' . . . for 'out-of-school learning' . . . in 'rural areas' . . . for 'literacy and family planning.'

The file is organized by projects that deal with media for development; it does not contain general or theoretical treatments of media's development role. Nor does it contain materials -- books and articles -- that can be found in regular libraries. Each project may have one or more documents that describe that project. The file contains over 430 projects and 1000 documents.

Utilization has been gratifying. Scholars from other universities have also used the file quite extensively. Off-campus groups can receive a listing of the contents of the file, and ultimately this printout will be produced in a book-like catalogue at regular intervals.

4. Visit of Egyptian Communication Planning Officials

As a direct result of the consultation in Egypt during May and June 1977, by Rogers and Dr. Clifford Block, a group of four communication officials from that country embarked in August 1977, on a multi-nation journey to learn first-hand about institutions and projects involved in communication-for-development. Their itinerary included the BRE and BVE projects in Guatemala, ACPO in Colombia, Florida State University in Tallahassee, South Carolina's ETV in Columbia, as well as visits to Houston, Louisville, and Washington, D. C. Their first stop was at Stanford University.

The Egyptian visitors included: (1) Mrs. Fawzia el-Moualled, the Director General of Cultural Broadcasting; (2) Mrs. Zeinab el-Hakim, a news commentator for Cairo TV; (3) Ms. Bahira Hussein, feature writer for Al Ahram newspaper; and, (4) Mrs. Mervat Shoukry, USAID/Cairo. Egypt, now the focus of an increasing AID effort, is mobilizing its existing talent to assess its

training needs for an application of communication to some area(s) of the nation's development. This delegation came, not with particular applications in mind, but to gather information about experiences elsewhere that will contribute toward establishing a Center of Communication for Development in Egypt.

The schedule for their week-long visit to Stanford is in Appendix C. They were particularly exposed to presentations and discussions about the process and effects of mass communication for development. Examples of countries with direct Stanford involvement are/were Mexico, Guatemala, El Salvador, Nicaragua, Colombia, Honduras, India, Korea, People's Republic of China, the Ivory Coast, and Tanzania. Faculty and staff from the Institute for Communication Research, the Institute for Mathematical Studies in the Social Sciences, and the School of Education participated in these sessions.

In addition, the Egyptian officials were thoroughly briefed about the M.A. program at Stanford, and the possibilities for future Egyptian participation in it. The visitors met students and professors informally, as well as in the seminars; were given time to explore the other facilities of the University, and finally, they were given copies of relevant reports in communication published by Stanford faculty and staff members. The visitors were provided with suggestions for books and reports that might form the nucleus of their professional library at the Center, when it is established.

This training seminar provided the Institute with ideas and lessons for future efforts of this kind. The presentations were aided by frequent use of films, slides, and videotapes.

The value of the week-long seminar at Stanford University will become apparent when the Center of Communication for Development is founded in Egypt during 1978.

HEALTH COMMUNICATION

In the Stanford Heart Disease Prevention Program (SHDPP), several types of activity have been pursued concurrently during the past year, including community studies, youth studies, and pre-field studies. The three-community study was described in some detail in last year's annual report. We are continuing the analysis of project data, expanding the small-scale laboratory and pre-field studies on problems associated with successful community-wide intervention to reduce cardiovascular risk, and are developing plans for another major community study. A post-doctoral training program is supported by a grant from the National Heart, Lung, and Blood Institute.

The Three Community Study

Since the last report, several papers reporting various aspects of the study have been published or are in press. The most important of these is entitled "Community Education for Cardiovascular Health" in the June 4, 1977 issue of The Lancet. Dr. J. W. Farquhar of the School of Medicine and Director of the Stanford Heart Disease Prevention Program is the senior author. From the Institute, Nathan Maccoby, Janet Alexander, Alfred McAlister, Joyce Nash Jackson, Anthony J. Meyer, and Henry S. Breitrose are among the ten authors.

Further analysis of the Three Community Study is continuing.

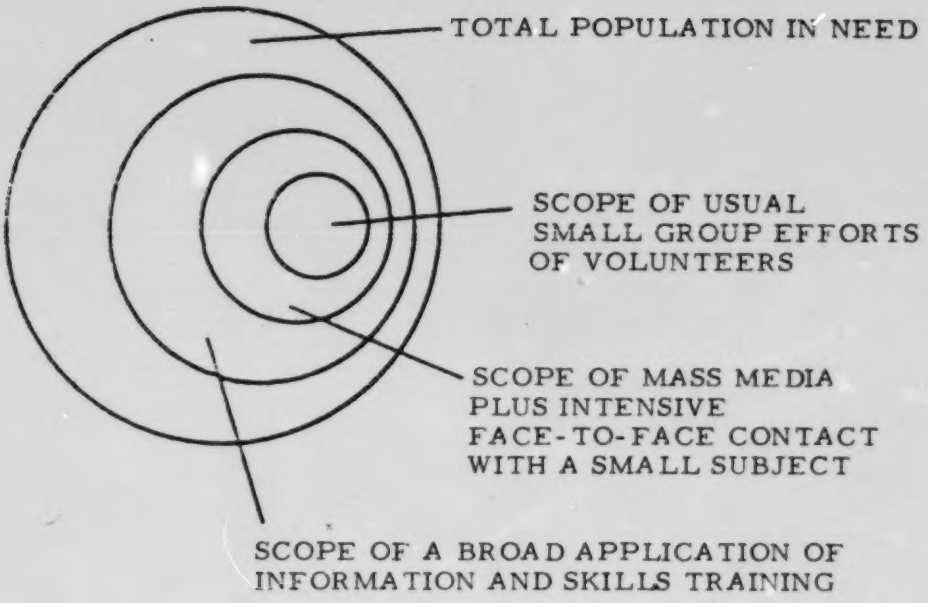
The Five City Study

A gradual rise in age-adjusted cardiovascular disease mortality in industrialized countries has considerably diminished what would otherwise be seen as striking gains in health during the last 75 years. These gains, due primarily to increased affluence, improved health practices and modern medicine, have occurred mainly in prevention of infant and early childhood mortality and in the improvement of medical and surgical procedures used in emergency situations after the onset of disease symptoms. Unfortunately, much of cardiovascular disease is inherently unresponsive to anything but pre-crisis preventive intervention. The U.S. male who survives to age 45 now has only a slightly greater life expectancy than did his forebear in 1900.

The changes in life style in industrialized countries, coupled with a lack of presymptomatic preventive medicine, have resulted in what can best be described as an epidemic prevalence of premature cardiovascular disease, principally coronary heart disease and stroke in spite of a recent evidence of a downward trend. Three quarters of the annual deaths which occur in the United States before the age of 65 (275,000), and 750,000 non-fatal illnesses annually, are attributable to coronary heart disease alone. The associated costs of medical treatment and lost human productivity are immense.

In the SHDPP Five City Project, we plan to demonstrate how intensive mediated and face-to-face instruction for self-directed change can stimulate widespread risk factor modification sufficient to lead to a reduction of morbidity and mortality in large and heterogeneous populations. By assessing the effects of large-scale health education programs for study populations in two cities totalling approximately 150,000, we hope to confirm our primary hypothesis that premature coronary heart disease and stroke can be substantially reduced through education in health habits and to validate our behavior-oriented intervention methods. This will require monitoring the rates of morbidity and mortality in the communities in addition to measuring the changes in knowledge, behavior, and physiologic risk factors.

If health education to reduce cardiovascular risk is to be widely applied over long periods of time and if it is to be effective in a public health sense, it must reach a satisfactory proportion of the total population in need. This total population in need is depicted on the next page as the large circle. The smallest circle indicates the very small proportion of the total population that would be touched were intervention efforts directed at individuals recruited as volunteers into the existing medical care system. The intermediate circle indicates the estimated scope of the mass media plus face-to-face contact programs similar to that used in the



Scope of Different Intervention Strategies

Stanford Three Community Study. The next larger circle indicates the probable scope of a program modeled on the expanded efforts we are proposing for the Stanford Five City Project. This project will be focused at the community level and will provide for a broad application of information and skills training. It is our belief that even this broad application of a mass media-based information and skills training program would fall short of an ideal program which might result were the cooperation of industry and government added

to the broad program we will fully describe in this application. It is clear that important theoretical questions remain before the method is clearly defined on how to achieve this ideal method that would attain the ultimate goal of addressing the entire population in need.

The research of the Stanford Heart Disease Prevention Program stems from the convictions of a group at Stanford University in the late 1960's that this problem should be approached through a sustained community-wide educational program designed to gradually change knowledge, attitudes, and to modify the underlying behaviors associated with an increased risk of cardiovascular disease. Rather than focus on the disease itself, it would be important to educate the public on ways in which aspects of human behavior are instrumental in influencing overall health. It would also be important to provide individuals with the necessary skills to successfully make changes in their behavior in the recommended directions. These behaviors are often long-engrained, resistant to change and, if changed, easily reinstated. However, we were convinced then (and even more so now after the Three Community Study) that we are in an era of public health during which behavioral science must become aligned with the traditional biomedical sciences in a multi-disciplinary assault on the human behaviors underlying much of the chronic disease so prevalent in the United States today.

The behavioral antecedents of a given disease or disorder must be clearly identified in ways that are age-, class-, and race-specific. Appropriate sub-populations then become the "audiences" who must then be informed and assisted in undertaking long-term modification of their behavior. To do this for large groups of individuals such as total communities, the costs of the risk reduction intervention efforts must be reduced to a practical level.

Our approach has been to convey the risk reduction program, at least in part, through the available channels of the mass media. Mediated risk-reduction efforts are one component of an overall intervention strategy which also attempts to convey the risk-reduction messages through the interpersonal channels of communication, information and influence that normally form a part of each person's life. The most potentially cost-effective approach, we believe, will be a blending of the mass media, face-to-face instruction, and social or interpersonal networks which can be linked in new ways to provide instruction that is widespread but audience-specific, is cost-effective and is capable of successfully assisting individuals to learn new skills with which to counter disease- or disorder-producing behavior. Thus, the study of the relationship between mediated and face-to-face instruction and their power to evoke diffusion and support through social networks is central to the emerging understanding of community-wide disease prevention.

In our previous work, principally the Three Community Study, we were able to show that it is possible to achieve widespread behavior change within communities on some risk factors given the type and level of intervention efforts employed in that study. However, these three communities (total population + 45,000) were insufficient in size to allow us to detect any important change in cardiovascular mortality, were these changes to have occurred in response to our campaign. In this proposal, we present a plan that our community-based risk-reduction research should now be applied to larger study populations that are sufficiently large to allow a demonstration of effect on morbidity and mortality from cardiovascular disease.

Despite some reservations and shortcomings, we are very encouraged by the Three Community Study results that we have observed. Our review of past efforts to inform and influence open populations through mass media led us to be initially pessimistic about the possibility of achieving any meaningful changes. There is ample evidence that prior behavior change attempts typically have been ineffective at overcoming client resistance to change and in preventing rapid returns to the status quo ante in exercise habits, in smoking cessation, and in weight reduction, despite the fact that these clients were usually volunteers rather than randomly selected persons. To generate an environment supportive of maintained behavior change requires an approach involving community-wide education. This approach uses mass media for widespread

information dissemination and employs efficient use of minimally trained health educators for skills training, the combination of which suggests considerably greater potential cost-effectiveness than has heretofore been reported.

Finding that a community-based field application of mediated and face-to-face instruction in beneficial health habits can affect knowledge and behavior, when these methods were used to teach specific behavioral skills and not merely to exhort, has confirmed our most hopeful expectations. It is of importance to note that beneficial changes in risk factors that might be considered of relatively minor degree individually can, when entered into the multiple logistic function of risk, add up to a sizable reduction in overall cardiovascular risk. The results provide evidence that behavior change for better health can indeed be accomplished through sustained community-based education, but we have only begun to define the optimal strategy for conducting that education.

The relative success of mediated methods for promoting habits conducive to health opens an avenue toward cost-effectiveness which would be denied us were we to apply health education only through the more restricted avenues currently in use by established health professionals. It is nevertheless germane to inquire whether the present environments of medical offices and hospitals and clinics can improve their ability to deliver risk reduction through mediated methods of instruction. We believe that carefully planned treatment

programs that rely (almost entirely) on the mediated instruction can result in significant changes in risk factors that are maintained over long periods of time. This belief stems from our Three Community Study. These results are gratifying and they offer further encouragement that mediated methods of health education can work in different settings.

Recent research on highly selected volunteers in laboratory or clinic settings has shown considerable improvement on the heretofore rather dismal rates of success in achieving risk reduction by face-to-face instruction in smoking cessation or weight reduction. It is our view that such changes, and particularly the difficult problem of long-term maintenance, would be enhanced were such volunteers to be treated within the milieu of the enhanced social support created by a multifactor public health education campaign directed at entire communities. We also believe that high-risk individuals, by virtue of receiving risk-reduction education, can become an important part of a complex system of health communication within a community.

The results of the Three Community Study in which the intensively instructed individuals did show considerable change in risk is an example of an effect of combined treatment. Although it is not surprising that a combination of treatments is more successful than a single treatment, the more relevant question is whether or not a

community setting offers opportunities for diffusion of health innovations and if so, how one might best harness these opportunities for diffusion in a way that would enhance the effectiveness of any treatment input into that community. Considering the huge annual costs of coronary heart disease, such community studies in prevention should be well worth the research investment.

Pre-field Studies

A second type of activity of SHDPP this past year has been work on small-scale laboratory and pre-field studies designed to pretest strategies for effective intervention, and to deal directly with particular problems of intervention tactics noted in the prior study. For example, future community studies will no longer limit change strategies and measurements to middle-aged adults. Rather, an important additional focus is prevention aimed at helping youth, in particular, but adults as well, from acquiring risk-inducing habits. For example, a project was directed by Dr. Alfred McAlister (now at Harvard) and Cheryl Perry of the School of Education was begun this year in local schools to study methods which might inhibit youngsters from taking up smoking. In this project, which grew out of McAlister's dissertation described in last year's report, 11-year olds are given training by slightly older peers on resisting temptations to start smoking. Very preliminary indications at the end of three months of intervention are promising.

Several other projects on diet modification, weight control, smoking cessation, and media strategies are currently under way by predoctoral and postdoctoral scholars in the training program for the prevention of cardiovascular disease.

This training program at Stanford University continues to be based in the Department of Medicine in the School of Medicine. John W. Farquhar is program director. Some of the other professors who participate in the program are: Nathan Maccoby, communication research; Stewart Agras, psychiatry; Peter Wood, cardiovascular epidemiology and lipid metabolism; Byron W. Brown, biostatistics; William L. Haskell, cardiovascular epidemiology and exercise physiology; and Donald Harrison, cardiology.

The purpose of the training program is to afford the trainees the opportunity to augment the knowledge and skills they bring to Stanford so that they are well prepared to plan, to conduct, and evaluate research programs in the field of cardiovascular disease prevention. Our aim during the past year has been to accomplish this in a way that afforded maximum flexibility to accommodate the background and interests of the individual trainees. Major emphasis was placed on training derived by firsthand experience in the ongoing research programs at Stanford, the Stanford Heart Disease Prevention Program in particular, and on special research and

development projects designed and carried out by trainees under faculty supervision. These activities were supplemented by research seminars and course work planned on an individual basis with each trainee.

Didatic and uniform requirements for our program this past year have been minimal. Trainees (most of whom were in their second year) preferred to tailor an individual program, that, in terms of their interests, made maximum use of the research opportunities that exist -- in cardiology, metabolism, epidemiology, nutrition, psychiatry and behavioral medicine, psychology, and communication, but all focusing on the underlying theme of cardiovascular disease prevention. The track system remained in place, but with trainees seeking a wide variety of consultation in their collaborative work and independent research.

Within the larger setting of the Stanford Heart Disease Prevention Program, the trainees take advantage of the many opportunities presented to expand their skills and knowledge in many areas such as research administration, methods of risk reduction applicable to a clinic setting, development of trainees' teaching potential, studies of treatment variables in weight reduction, dietary modification, stress management, exercise promotion and blood-pressure control, and modes of assessing the efficiency and efficacy of alternative approaches to risk-factor modification.

Special research activities relevant to the proposed Five City Multifactor Risk Reduction Project took place. For example, trainees were both observers and active participants in the development of the Five City research proposal documents, the debates and seminars in which the design, strategies of intervention, budget, and other issues were vigorously discussed. Through this involvement in a variety of activities related to the research process, the trainees gained immeasurably in terms of their firsthand grasp of the process of peer review, the protocols involved in proposal writing, site visits, and other important, though often overlooked, elements of training in academic research. Trainees thus had a unique opportunity to serve as observers and participants with an inside view of how a multidisciplinary team goes about solving practical and scientific problems.

Postdoctoral Trainee Projects

Aversive smoking has shown impressive results in helping produce long-term abstinence. A recent review showed it to be relatively more effective than alternative treatment options. To date, this promising program has been applied with the help of highly trained professional staff within intensive treatment programs. In an effort to develop materials that would enable the health professional in the field to provide effective assistance for smoking cessation, a study was undertaken to evaluate mediated

aversive smoking treatment materials (audiotaped instructions for aversive smoking, deep muscular relaxation and printed instructions). Long-term (6+ month) follow-up results are being compiled at the present time but end-of-treatment results showed between 50 to 70 percent of participants had stopped smoking. Predictors of outcome performance will be sought in the data analysis scheduled next to be followed by systematic field testing in private physician offices. (Brian G. Danaher, Robert W. Jeffery, Raul Zimmerman, Eliot Nelson.)

Youth Intervention Projects

The Stanford Heart Disease Prevention Program has initiated the planning and/or implementation of several projects on youth intervention of various cardiovascular risk factors (smoking, weight control, diet change, inactivity). The focus is on developing educational opportunities that introduce young persons to the factors that compel them to adopt certain patterns of behavior and to equip them to resist (cope) with those factors. Curriculum materials are being developed for application in area Junior and Senior High Schools. These materials are best viewed as adjuncts to ongoing classes in health -- although extra-curricular classes might also be tested if extant programs compatible with our materials cannot be found. (Cheryl Perry, Brian G. Danaher, Robert W. Jeffery, Thomas J. Coates, Alfred McAlister.)

Cost-Effective Intervention Projects

Plans are being formulated for a number of studies that would investigate the potential utility of providing behavior change instructions by mail and over the telephone to interested volunteers. The projected design would compare the effectiveness of a mediated-mail and mediated-telephone program with an in vivo treatment group typical of most current research. The goal is to ascertain the most cost-effective package of materials that would accomplish temporary change and enduring maintenance thereafter. (Brian G. Danaher, Robert W. Jeffery.)

Smoking Cessation with Pregnant Women

Despite growing evidence that cigarette smoking during pregnancy leads to an increased incidence of perinatal infant mortality, little has been done to systematically develop effective programs to help pregnant women stop smoking. Reports in the literature have described generally ineffectual attempts to verbally admonish smoking and encourage abstinence. An innovative program incorporating both risk education and behavioral skills training was tested with a group of 11 pregnant women smokers. The educational component detailed the risks associated with parental smoking while the skills training component outlined strategies for initial cessation and enduring abstinence. A three-month follow-up assessment revealed

that four of the initial group of participants had stopped smoking. Considering only those pregnant women who completed the entire program, four of eight, or 50%, were found to be abstinent at follow-up. Suggestions for further controlled research and public health applications are discussed. (Brian Danaher, Catherine Shisslak, Camilla Thompson, Julian Ford.)

Communication for Cancer Control

An article by Matilda Butler and William Paisley describing the Institute project, Public Communication Programs for Cancer Control (supported by the National Cancer Institute), appeared in the Spring 1977 issue of Health Education Monographs. Details of this project, which involved a survey and evaluation of numerous cancer public communication programs in the United States and Great Britain, have been presented in the past two annual reports. Matilda Butler has prepared a plan for related research through the Northern California Cancer Program, in which she has been serving on the education committee.

OTHER RESEARCH AREAS

Communication and Media

Leonard Sellers completed his dissertation in 1977 on "Investigative Reporting: Methods and Barriers". Seller's field study was centered around interviews with nearly 100 journalists, and the research ultimately focused on two main categories: the problems encountered and the techniques used in this particular kind of journalism. The former includes sections on management, legal considerations, ethics and personal problems. The latter category explores the process of beginning an investigation, sourcing information, different investigative structures and the results of this form of journalism.

Sellers and William Rivers edited a book entitled Mass Media Issues: Articles and Commentaries (Prentice-Hall, 1977). Articles in the book, each of which is followed by a commentary by one of the editors, are grouped into the following categories: Television and Cable; Radio; Newspapers; Magazines; Film; and Advertising. Each category is further subdivided into sections entitled "Social Force" and "Constraints".

Jeff Charles, Larry Shore, and Rusty Todd completed a study of economic interest and news flow. The study is a content analysis of the New York Times' coverage for two six-month periods in

1970 and 1975 of African countries south of the equator and countries through which the equator passes. The study examines the type and frequency of coverage, and the correlations between this coverage and U.S. economic interest.

James Larson and Andrew Hardy continued their study of world news coverage on U.S. network television's evening news broadcasts. The initial findings, covering the period from January of 1972 through mid-1975 are forthcoming in Gazette (Winter 1977-78). Larson expanded the original data file through the end of 1976 for his dissertation, which is tentatively titled: America's Window of the World: U.S. Network Television's Coverage of International Affairs, 1972-1976.

Matilda Butler and William Paisley conducted a coverage study of women's rights issues in American magazines, taking the unusual coverage of "ERA Summer 1976" as their point of departure. In the July bicentennial issues of more than 30 American magazines, features of various kinds related to the Equal Rights Amendment were published in order to increase public awareness of ERA and the controversy surrounding it (this unusual case of coordinated coverage was arranged by Sey Chassler, editor of Redbook). Butler and Paisley analyzed the content of the ERA coverage of various categories of magazines; they also traced magazine coverage of women's rights issues back to 1922, one year before the Equal

Rights Amendment was introduced in Congress. Aspects of their findings will appear in 1978 issues of the Journal of Communication and Journalism Quarterly.

Communication and Children

Donald Roberts and several graduate and undergraduate students have begun a series of studies examining children's responses to television commercials. The research is particularly concerned with whether and how it might be possible to inoculate children against commercials by teaching them to analyze such appeals critically. Evaluations of several instructional films that attempt to teach children about various commercial techniques and how to interpret commercials have been conducted.

The first study evaluated the effectiveness of the Consumer's Union's The Six-Billion $$$ Sell. Relative to a control group which viewed an unrelated film, fourth, sixth, and eighth grade children who saw the Consumer's Union film were subsequently more skeptical of commercials in general and were more critical of a set of specific commercials used to test particular effects of the film. The results were strongest among the younger children, perhaps because their older counterparts already exhibited skepticism regarding commercials before exposure to the film. The results of this study are reported in a paper entitled "Teaching Children to Analyze Commercials: An Evaluation of The Six

Billion $$$ Sell" by Peter Christenson, Linda Craig Mooser and John Durham. Christenson presented the paper at a symposium on Television Advertising and Children that Roberts organized and chaired for the Fifth Annual Telecommunications Conference at Airlie, Virginia.

Roberts, Wendy Gibson, and Christenson are presently working on a paper that will present the results of a second study which evaluates the effectiveness of Seeing Through Commercials (Vision Films). Preliminary analyses of data from this study indicate that this film, too, makes children (second, third, and fifth graders) more skeptical of commercial appeals. A third paper reporting a comparison between the two films is also in preparation.

In a study commissioned by the Alum Rock - San Jose Teacher Corps Project, five Institute researchers (Matilda Butler, William Paisley, Marilyn Fife, Armando Valdez, Nicholas Valenzuela) surveyed 143 households in the attendance area of a single elementary school to determine "Neighborhood Communication Patterns Pertaining to Children and the Education. Among other findings on neighborhood networks, the study showed that Black, Chicano, and Anglo parents use various sources of school-related information to different extents. When asked about new channels of information that the school might establish to improve communication with parents, the ethnic groups also differed in the channels they would prefer to use in the future.

Communication, Attitudes, and Behavior

Donald Roberts and Nathan Maccoby continued their interest in counterarguing and a cognitive response approach to persuasion and attitude change with a paper presented at the American Psychological Association meetings in San Francisco. The paper, "Some Applications of Cognitive Attitude Theory", examines various applications of cognitive response theory to persuasion campaigns aimed at persuading people to change behavior in order to reduce the risk of heart disease. The paper argues that we often aim persuasive messages at the wrong attitudes when we are concerned with behavior change. For example, it is no longer necessary to convince people that smoking is bad for them. They already believe this, and their responses to such messages may well preclude behavior change. ("I know it is bad, but I have tried to quit and I can't"). A more effective approach, the paper argues, would be to concentrate on persuading people that they can quit and showing them how. Cognitive responses to such a message would be less likely to be negative or defeating of the behavior change advocated.

In the same vein, Roberts has also co-authored a chapter entitled "The Nature of Cognitive Responses", which will appear in Cognitive Responses to Persuasion, edited by R. Petty, T. Ostrom, and T. Brock (McGraw Hill, 1978). This chapter examines exactly what is meant by "cognitive responses".

Communication and Family Planning

With funds provided by the HEW Office of Family Planning, Institute researchers conducted a 12-month project on family planning communication in Watsonville, California, one of the sites of the earlier Stanford Heart Disease Prevention Program. Directed by Everett Rogers, the family planning project was concerned (1) with assessing the needs of low-income women (many of whom were Spanish-speaking) and their partners in Watsonville through personal interviews, group interviews, and observation, and (2) with mounting a series of communication interventions with the assistance of the two family planning agencies in the community. The interventions included radio advertising spots, posters, pamphlets, and assistance to family planning outreach workers.

A relatively high rate of unwanted pregnancy occurred in Watsonville among low-income families, and a corresponding low rate of using family planning methods. The first phase of the project sought to identify the main reasons for unwanted pregnancy and non-adoption of contraceptives, such as the socio-cultural heterophily between providers of family planning and their clients, the masculine role, religious attitudes, and the unacceptability of contraceptive methods like the pill and IUD.

Rina Alcalay is completing her dissertation on provider-receiver communication about family planning. A final report is also available from the project. In addition to Rogers and Alcalay, the project research staff included Ramon Garcia, Dorothy Leonard-Barton, Fran Hereth, and Elena Viveros.

Everett Rogers, with Dr. Larry Kincaid of the East-West Communication Institute and Professor Kyung Kyoon Chung of Seoul National University, continue to collaborate in analyzing data from a 1973 survey of communication networks in the diffusion of family planning innovation in Korean villages. Several papers and book chapters emerged from this research during the past year, and a book is in process. To facilitate this research, Rogers visited the East-West Communication Institute in December 1976, Chung visited Stanford University in January 1977, and Kincaid followed in February. Two Korean students from the East-West Center, Joung Im Kim and Myung Hee Lee, spent Summer 1977 at Stanford University, assisting with the data-analysis and studying the family planning project.

Communication and Energy Conservation

A number of energy-related research projects are underway at the Institute. During the spring and summer of 1977, Dorothy Leonard-Barton has been working on several aspects of energy conservation, along with Everett Rogers, William Paisley, David Montgomery of the Graduate School of Business, Eugene Rosa of

the Sociology Department, and members of the Department of Mechanical Engineering. The spring work, a comprehensive literature review of the fugitive literature on conservation behavior, culminated in a paper by Montgomery and Leonard-Barton, "Toward Strategies for Marketing Home Energy Conservation", presented at the National Conference for Energy Conservation, June 8 - 10, 1977. Leonard-Barton also attended a symposium on the Social and Behavioral Implications of the Energy Crisis at the Energy Institute, University of Houston, June 28, 29, 1977.

During the summer of 1977 and through the academic year 1977-78, Leonard-Barton is working as a member of an interdisciplinary team examing the feasibility of decentralized energy systems under an ERDA contract with Argonne National Laboratory and Stanford. In addition, Rogers and Leonard-Barton have designed and will be directing a local survey, funded by the Stanford Institute for Energy Studies, of homeowner perceptions of energy-conserving practices. This research, which will serve as a pilot for future field experiments on the promotion of conservation, will identify potential target audiences and examine the evaluative criteria used by consumers in deciding whether or not to conserve.

William Paisley, Kathryn Cirksena, and Dorothy Leonard-Barton, along with Eugene Rosa of the Sociology Department, have submitted a proposal to ERDA to study "voluntary simplicity" in five regions in the United States. This research, which complements the two other energy-related studies underway at the Institute, would investigate the nature of values subsumed under the term "voluntary simplicity", identify adherents of that life style, and establish scales to measure behavior which exemplifies voluntary simplicity.

Professional Communication

Everett Rogers, William Paisley, Matilda Butler, and others at the Institute have been working with the National Institute of Education in the design of improved communication systems to assist educators in learning about, evaluating, and adopting new educational practices. Rogers' report, Extending the Agricultural Extension Model, has been a point of departure for adapting the communication role of extension agent or "linker" in national, state, and local educational systems.

Paisley and Butler prepared a paper, "Factors Affecting the Selection and Training of Linking Agents in Education", for the joint Office of Education - National Institute of Education conference on educational dissemination held at the Belmont Conference Center (Belmont, Maryland), November 1 - 4, 1977. This paper

contends that three distinct linking roles -- the "resource finder", the "process helper", and the "solution giver" -- are found in education and cognate fields. Each of these roles derives from a different "entitlement" or set of assumptions concerning the interpersonal communication that takes place between linker and client. The requirements of each role call for different selection and training criteria.

Butler, Frances Hereth, and four Institute doctoral students -- Donna Lloyd-Kolkin, Kathryn Cirksena, Marilyn Fife, and Teresa Odden -- are working together to establish a new nationwide communication system for the Office of Education. Their project, the Women's Educational Equity Communications Network, is based at the Far West Laboratory for Educational Research and Development (San Francisco) and is supported by OE's Women's Educational Equity Act Program. The Network combines the functions of a documentation center, similar to NIE's Educational Resources Information Centers (ERIC), and a technical assistance-referral center. The Network's clients include teachers, administrators, researchers, legislators, students, parents, and concerned citizens. Various publications, workshops, and other communication activities have been planned to meet the needs of each client group for information related to women's educational equity.

Paisley and Butler prepared a paper on evaluation principles and designs for the Research Conference on Nursing Information Systems (University of Illinois Medical Center, June 1977). The paper emphasized requirements for formative and summative evaluation that planners of health-care information systems should make provision for. A proceedings of the conference is forthcoming from Springer Publishing Company (New York).

Studies Concerning Women

With support from Stanford's Center for Research on Women, Kay Magill and Kathryn Cirksena conducted a survey of women enrolled in college re-entry programs in the Bay Area. Their variables of concern included the communication channels by which women learned of re-entry programs and the attitudes of re-entry women with regard to services (e.g., counseling, block scheduling) provided by the colleges.

A study of the proportion and distribution of women in communication, psychology, sociology, and other doctoral programs was conducted by Matilda Butler, Suzanne Pingree, and William Paisley. National enrollment data show that women are less likely to continue on to higher levels of graduate study than men: the attrition is more pronounced in communication, than, for example, psychology. Results of this study appeared in the January 1977 issue of Journalism Educator.

A corollary study of the attitudes of communication, psychology, and sociology departments toward the hiring of professional couples was conducted by Butler, Paisley, Pingree, and Robert Hawkins. Articles resulting from this study of "anti-nepotism's ghost" are to appear in Journalism Educator and Psychology of Women Quarterly.

An article by Butler and Paisley on the "Status of Professional Couples in Psychology", reporting data from the 1958 and 1973 directories of the American Psychological Association, appeared in the Summer 1977 issue of Psychology of Women Quarterly.

DISSERTATIONS

The following dissertations were completed in 1976-77:

JESSE M. CATON
The Integrated Computer Databases as a Medium for the Management and Access of Textual Information

DAVID M. DOZIER
Behavioral Thresholds and Communication Networks

DAVID B. JONES
The National Film Board of Canada: The Development of Its Documentary Achievement

JEREMIAH O'SULLIVAN
Rural Development Programs and the Problem of Marginality in the Western Highlands of Guatemala

MICHAEL E. PACANOWSKY
Toward a Communication Theory of Organization

LEONARD L. SELLERS
Investigative Reporting: Methods and Barriers

L. THERESA SILVERMAN
Effects of Sesame Street Programming on the Cooperative Behavior of Young Children

DOUGLAS S. SOLOMON
Media Sensitization: Effects of Salience and Uncertainty on Information Seeking about Heart Disease

ESTEBAN SORIANO
Minority Activism and Media Access: An Analysis of Community Participation in Policy, Production, and Programming

Master of Arts in

COMMUNICATION MEDIA AND SOCIAL CHANGE

The following received their M.A. in 1977:

JOSEPH YU
A Channel Study Among the Farmers in Hong Kong (Hong Kong)

MARIA TARANGO
An Educational Needs Assessment: Peralta College for Non-Traditional Study, Fruitvale (U.S.A.)

HERBERT KOENEKE
The Uses of TV for Development: The Venezuelan Case (Venezuela)

NASRIN AMERI
Media Behavior of Turkish People in Iran (Iran)

NANTHAWAN SUCHATO
Influence of Exposure to Televised Violence Family SES, and Family's TV Control on Aggressive Tendencies Among 4th Graders in Bangkok (Thailand)

ANNIE BENVENISTE
Out-of-School ETV in the Ivory Coast (France)

MARCO ENCALADA
Marginality and Mass Media in the Highlands of Ecuador (Ecuador)

LUIS ANTONIO DE NORIEGA
The Role of Television Soap Operas in Development (Mexico)

FERNANDO MORRETT
Communication Networks Among Urban Squatters in Monterey, Mexico (Mexico)

ALBERTO MONTOYA
An Approach to a Theory of Communication Concerning Mexican Peasants (Mexico)

TATIANA GALVAN
Political Aspects of Newspaper Coverage in Mexico (Mexico)

MARK VERMILION
A Problematic Evaluation Design for the National Program for the Formation of Human Resources in Honduras (U.S.A.)

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Listed below are those who are completing the program:

Gilberto Bello, Colombia

Ana L. Da Costa Pereira, Brazil

Naswil Idris, Indonesia

Teresa Matte, Chile

Nalini Mishra, India

Ladislaus Mosha, Tanzania

Rebecca Ocampo, Philippines

Felipe Risopatron, Chile

Doro Schael, Mexico

Pierre Seya, Ivory Coast

Esthela Trevino, Mexico

Faustin Yao, Ivory Coast

Goli Yazdi, Iran

Joseph Mbindyo, Kenya

Joyce Stanley, U.S.A.

Eduardo Navas, Guatemala

PAPERS AND PUBLICATIONS

This section summarizes recent writing activities of Institute members. More details on many of these activities are provided in earlier sections of the Annual Report.

The books and monographs in print are available either through the publisher or through commercial book sellers. Reprints of articles and papers are, in some cases, available from the authors in care of the Institute. Reports published by the Institute for Communication Research are available directly from the Institute for a nominal postage and handling charge.

Books, Monographs, and Project Reports

Agarwala-Rogers, R., Rogers, E., & Wills, R. Diffusion of IMPACT innovations from 1973-1976: Interpersonal communication networks among university professors. Stanford, California: Applied Communication Research, 1977.

Butler, M., Paisley, W., Fife, M., Valdez, A., & Valenzuela, N. Neighborhood communication patterns pertaining to children and their education. Stanford, California: Communication Research Associates, 1977.

Jamison, D., Spain, P., & McAnany, E. (Eds.) Radio for education and development: Case studies and syntheses. Washington, D.C. The World Bank, May 1977.

Jamison, D. & McAnany, E. Radio for education and development. Beverly Hills: Sage Publications, in press.

Lenglet, F. & McAnany, R. Rural adult education and the role of mass media: A comparative analysis of four projects. Stanford Institute for Communication Research, Report, 1977.

Mayo, Hornik, R., & McAnany, E. Education reform with television: The El Salvador experience. Stanford, California: Stanford University Press, 1976.

Nelson, L. & Lerner, D. (Eds.) Communication research: A half-century appraisal. Honolulu: University Press of Hawaii, 1977.

Nelson, L. & Schramm, W. Twelve years of television in American Samoa: Lessons from a brave experiment. Palo Alto: Stanford University Press, in press.

Paisley, W. & Butler, M. Computer assistance in information work: Conceptual framework for improving the computer/user interface in information work: catalog of acceleration, augmentation, and delegation functions in information work. Stanford, California: Applied Communication Research, 1977.

Rivers, W. L. Free-lancer and staff writer. (2nd ed.) Belmont, California: Wadsworth Publishing, 1976.

Roberts, D. F. Television and social behavior. New York: Columbia University Press, 1978 (with G. Comstock, S. Chaffee, N. Katzman, & M. McCombs).

Rogers, E. M. & Agarwala-Rogers, R. Communication in organizations. New York, Free Press, 1976.

Rogers, E. and others (1976) Extending the agricultural extension model. Stanford, California: Stanford University, Institute for Communication Research, Mimeo Report.

Rogers, E. and others (1977) The innovation process in public organizations. Ann Arbor: University of Michigan, Department of Journalism and Program in Mass Communication Research, Mimeo Report.

Rogers, E. and others (1977) Bibliography of the diffusion of innovations. Monticello, Illinois: Council of Planning Librarians Exchange Bibliographies, Bibliography 1420-2.

Rogers, E. and others (1977) The Watsonville family planning communication project. Stanford, California: Stanford University, Institute for Communication Research, Mimeo Report.

Rogers, E. & Pareek, U. (1977) Acceptability of fertility regulating methods: A synthesis of research literature. Stanford, California: Stanford University, Institute for Communication Research, Report.

Strover, S. A case history of the Stanford-Carleton-Ames curriculum sharing demonstration.

Strover, S. Evaluation report on the Stanford-L'Universite de Montreal telecolloquium. June 9-10, 1977.

Chapters in Books

Butler, M. & Paisley, W. Frameworks, criteria, and procedures for evaluating health care information systems. In Werley, Harriet, et al. (Eds.) Research on Nursing Information Systems. New York: Springer, in press.

McAnany, E. Television: Mass communication and elite controls. In Stuart S. Nagel (Ed.) Policy Studies Review Annual, Vol. 1. Beverly Hills: Sage Publications, 1977.

Parker, E. B. Social implications of computer/telecommunications systems. OECD Informatics Studies: Conference on Computer/Telecommunications Policy. Paris: Organization for Economic Cooperation and Development, No. 11, 1976, 87-129.

Parker, E. B. Technical and economic considerations in planning radio services. (With Bruce B. Lusignan), In Spain, P., Jamison, D., & McAnany, E. (Eds.) Radio for Education and Development: Case Studies, Vol. 2: A Document of the Education Department of the World Bank. Washington, D. C., Chap. XIV, May 1977.

Parker, E. B. National development support communication (with Ali Mohammadi). In Teheranian, Majid & Hakiszadeh, Farhad & Vidale, Marcello L. (Eds.) Communications Policy for National Development: A Comparative Perspective. London: Routledge & Kegan Paul, 1977, Chapter 8, 167-201.

Parker, E. B. Information technology: Its social potential (with Dunn, D. A.) Libraries in Post-Industrial Society. Ed. Leigh Estabrook. Phoenix: Oryx Press, 1977, Part IV, 199-215.

Parker, E. B. Tecnologia da informacao: Suas potencialidades sociais. Tecnologia Educacional, Revista da Associacao Brasileira de Teleducaco, 1977, Ano VI, No. 16, 26-32. (Translated from: Information Technology: Its Social Potential. With D. A. Dunn. Science, 176, 1392-1399, 30 June 1972.)

Roberts, D. L. The nature of cognitive responses to persuasive appeals. In R. Petty, T. Ostrom & T. Brock (Eds.), Cognitive Responses in Persuasion. New York: McGraw-Hill, 1978 (with J. T. Cacioppo, S. G. Harkins, & R. E. Petty).

Rogers, E. (1977) Network analysis of the diffusion of family planning innovations. In Paul Holland and Samuel Leinhardt (Eds.) Social Networks: Surveys, Advances, and Commentaries, New York.

Rogers, E. (1977) Network analysis of the diffusion of innovations: Family planning in Korean villages. In Lyle Nelson and Daniel Lerner (Eds.) Essays in Honor of Wilbur Schramm. Honolulu: University Press of Hawaii.

Rogers, E. The passing of the dominant paradigm - reflections on diffusion research. In Wilbur Schramm and Daniel Lerner (Eds.) Communication and Change: The Last Ten Years - and the Next. Honolulu: University Press of Hawaii.

Rogers, E. (1976) Where are we in understanding the diffusion of innovations? In Wilbur Schramm and Daniel Lerner (Eds.) Communication and Change: The Last Ten Years - and the Next. Honolulu: University Press of Hawaii.

Articles

Butler, M. & Paisley, W. Communicating cancer control to the public. Health Education Monographs, 1977, 5, 5-24.

Butler, M. & Paisley, W. Equal rights amendment: Magazine coverage, ERA summer, 1976. Journalism Quarterly, in press.

Butler, M. & Paisley, W. Magazine coverage of the equal rights amendment, 1922-1976. Journal of Communication, in press.

Butler, M. & Paisley, W. Status of professional couples in psychology. Psychology of Women Quarterly, 1977, 1, 307-318.

Butler, M. Pingree, S., & Paisley, W. Writers decry percentage of women doctoral students. Journalism Educator, 1977, 31, 49-51.

Janus, N. Research on sex roles in the mass media: Toward a critical approach. Insurgent Sociologist, Vol. 7 (3), Summer 1977.

McAlister, A. & Bernstein, D.A. The modification of smoking behavior: Progrss and problems. Addictive Behaviors. Vol. 1, 89-102. Pergamon Press, 1976.

McAlister, A. L., Farquhar, J. W., Thoresen, C. E., & Maccoby, N. Behavioral science applied to cardiovascular health: Progress and research needs in the modification of risk-taking habits in adult populations. Health Education Monographs, Vol. 4, 45-74. Spring 1976.

McAnany, E. Why educational technology? Some decision criteria for choosing or not choosing. Educational Broadcasting International, in press.

Maccoby, N., et al. Reducing the risk of cardiovascular disease: Effects of a community-based campaign on knowledge and behavior. Journal of Community Health, Vol. 3, No. 2. Winter 1977.

Maccoby, N. & Meyer, A. M. Role of opinion leadership in a cardiovascular health education campaign. Communication Yearbook, Proceedings of the 27th Annual Conference of International Communication Association. 1977.

Maccoby, N., Farquhar, J. W., Wood, P. D. et al. Community education for cardiovascular health. The Lancet, June 4, 1977, 1192-1195.

Parker, E. B. Social implications of computer/telecoms systems. Telecommunication Policy, 1:1, December 1976, 3-20.

Pingree, S., Butler, M. Paisley, W., & Hawkins, R. Anti-nepotism's ghost: Attitudes of Administrators toward hiring professional couples. Psychology of Women Quarterly, in press.

Pingree, S. & Butler, M. Attitudes toward hiring professional couples in schools and departments of journalism. Journalism Educator, in press.

Roberts, D. F. Attitude change research and the motivation of health practices. Paper presented at the American Heart Association Conference on Applying Behavioral Science to Cardiovascular Risk, Seattle, Washington, June 1974. Published in A. J. Enelow & J. B. Henderson (Eds.) Applying Behavioral Science to Cardiovascular Risk: Proceedings of a Conference. New York: American Heart Association, 1975.

Roberts, D. F. Actions speak louder than words -- sometimes. Human Communication Research. Spring 1975. (with A. D. Leifer).

Roberts, D. F. Do the mass media play a role in political socialization. Australian and New Zealand Journal of Sociology, 1975, 11, 37-43. (with R. P. Hawkins and S. Pingree).

Roberts, D. F. Watergate and political socialization: The inescapable event. American Politics Quarterly, 1975, 3, 406-422. (with R. P. Hawkins and S. Pingree).

Rogers, E. Models of communication and the passing of the dominant paradigm of development. Journal of Communication, in press.

Spain, P. Past studies and future research needs in communication technology transfer. Revista de Tecnologia Educativa, in press.

Spain, P. Values and other economic realities. Chasqui, No. 15.

Spain, P. Values and other economic realities in development communication. Revista del Centro de Estudios Educativos, in press.

Papers

Cook, T. & McAnany, E. Some recent U.S. experiences with evaluation research and their possible implications for Latin America. Paper prepared for the Conference on the Measurement of Impact of Nutrition and Related Health Program in Latin America, Panama, August 1977.

Farquhar, J. W., Maccoby, N., & Wood, P. D. The Stanford three-community study: A community-based cardiovascular risk education campaign. Proceedings of the University of Michigan Health Services Research Center Conference on Factors Promoting or Inhibiting Change in Service Organizations and their Clients. No. 5-6, 1976, Ann Arbor, Michigan.

Maccoby, N. Report on the Stanford Heart Disease Prevention Program Community Studies. Presented at the Plenary Session of the Canadian Public Health Association, Vancouver, June 28, 1977.

Maccoby, N. & Roberts, D. F. Some applications of cognitive attitude change theory. Paper presented at American Psychological Association meetings in San Francisco, August 26, 1977.

Maccoby, N. Field experimentation in community intervention. Paper presented at American Psychological Association meetings in San Francisco, August 26, 1977.

Maccoby, N. Communication in health promotion today. Paper presented at the South African Health Education Symposium, Pretoria, South Africa, October 26, 1977.

Maccoby, N. The doctor's role in health education. Paper presented at the National Conference on Coronary Artery Disease convened by the Division of Continuing Medical Education, University of Witwatersrand, South Africa, November 1, 1977.

Maccoby, N. & Blackburn, H. Heart attack -- the new epidemic -- what we should know and can do about prevention. Public lecture presented at the National Conference on Coronary Artery Disease convened by the Division of Continuing Medical Education, University of Witwatersrand, South Africa, November 2, 1977.

Maccoby, N. Attitude change and heart disease risk reduction. Colloquium presented at the Social Psychology Department, London School of Economics, November 8, 1977.

Parker, E. B. Toward national information policies. Address to the Library Association of Australia, Hobart, Australia, August 1977.

Parker, E. B. The economic and social development potential of communication technologies. Paper presented at the 48th Congress of the Australia New Zealand Association for the Advancement of Science (ANZAAS), Melbourne, Australia, September 1, 1977.

Parker, E. B. Telecommunication policy and information services. Address to the American Society for Information Science, Chicago, September 1977.

Roberts, D. F. Some applications of cognitive attitude change theory. Paper presented at the annual meeting of the American Psychological Association, San Francisco, California, August 1977 (with N. Maccoby).

Rogers, E. New possibilities in research methods: Implications for communication research in Latin America. Paper presented at the Conference on Communication Research for Rural Development in Latin America, Cali, Colombia, 1976.

Rogers, E. Re-invention of new ideas during the innovation process in public organizations. Paper presented at the Conference on Technology Transfer to Urban Governments: Agenda for Research and Education, Syracuse University, 1977.

Spain, P. Values and other economic realities. Paper presented to a seminar of the Asociacion Latinoamericana de Educacion Radiofonica, San Jose, Costa Rica, October 1976.

Spain, P. & McAnany, E. Formative evaluation in theory and practice. Paper presented to the International Extension College's Conference on Rural Development and Distance Teaching, Dartington Hall, Devon, England, September 1977.

INSTITUTE PUBLICATIONS IN ERIC

A selected list of Institute publications in ERIC (Educational Resources Information Center) is presented on the following pages. The accession number or "ED" number is listed to identify a document when ordering. All of the documents listed are available either in microfiche or hard copy.

The publications are available from:

ERIC Document Reproduction Service
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Arlington, Virginia 22210
(703) 841-1212

For complete information on ordering and current prices of these publications, please consult a current issue of Resources in Education (RIE). RIE is a monthly abstract journal and index which identifies recently completed research or research-related reports, books, and other documents of educational significance, regardless of source. RIE is available at most college and university libraries and from public libraries.

The following list is in alphabetical order, but not all the authors of each report are mentioned.

Butler, M.
Image of Women in Advertisements: A Preliminary Study of Avenues for Change.
ED 118107

Butler, M.
Social and Psychological Predictors of Information Seeking and Media Use: A Multivariate Reanalysis.
ED 017 819

Butler, M.
Reaching Adults for Lifelong Learning. I. Final Report and Summary.
ED 068 792

Butler, M.
The Convergent-Discriminant Matrix: Multitrait-Multimethod Logic Extended to Other Research Decisions.
ED 135797

Butler, M.
Public Communication Programs for Cancer Control.
ED 136790

Butler, M.
Reaching Adults for Lifelong Learning. II. Case Studies of Exemplary Programs.
ED 068 793

Butler, M.
Reaching Adults for Lifelong Learning. III. Directory of Reporting Programs and Statistical Tables.
ED 068 794

Butler, M.
Social Policy Research and the Realities of the System: Violence Done to TV Research.
ED 062 764

Carter, R. F.
The Structure and Process of School-Community Relations. Volume I. Informal Communication about Schools. Project: CAST
ED 017 054

Carter, R.F.
The Structure and Process of School-Community Relations. Volume II. Between Citizens and Schools. Project: CAST.
ED 017 055

Carter, R.F.
The Structure and Process of School-Community Relations. Volume III. The Structure of School-Community Relations. Project: CAST
ED 017 056

Carter, R.F. et al.
The Structure and Process of School-Community Relations. Volume IV. The Process of School-Community Relations. Project: CAST.
ED 017 057

Carter, R.F., et al.
The Structure and Process of School-Community Relations. Volume V. The Structure and Process of School-Community Relations: A Summary. Project: CAST.
ED 017 058

Collins, A.
The Interview: An Educational Research Tool. An Occasional Paper from ERIC at Stanford.
ED 044 931

Comstock, G. & Maccoby, N.
The Peace Corps: Educational Television Project in Colombia -- Two Years of Research. Report No. 1. The Project as a Whole: Organization, Adaptation and Expansion, November 1966.
ED 020 663

Comstock, G. & Maccoby, N.
The Peace Corps: Educational Television Project in Colombia -- Two Years of Research. Report No. 2. The Project's First Semester: Pupil Achievement, Teacher Attitudes and the Work of the Utilization Volunteer.
ED 020 664

Comstock, G. & Maccoby, N.
The Peace Corps: Educational Television Project in Colombia -- Two Years of Research. Report No. 3. Improving the Effectiveness of the Utilization Volunteer and the Utilization of ETV by the Colombian Teacher.
ED 020 665

Comstock, G. & Maccoby, N.
The Peace Corps: Educational Television Project in Colombia -- Two Years of Research. Report No. 4. The Colombian Teacher and the Utilization: Making ETV Work in the Schools of a Developing Country.
ED 020 666

Comstock, G. & Maccoby, N.
The Peace Corps: Educational Television Project in Colombia -- Two Years of Research. Report No. 5. The Day-to-Day Job of the Utilization Volunteer: Structure, Problems, and Solutions.
ED 037 997

Comstock, G. & Maccoby, N.
The Peace Corps: Educational Television Project in Colombia -- Two Years of Research. Report No. 6. Instructional Television for the In-Service Training of the Colombian Teacher, 1966.
ED 020 667

Comstock, G. & Maccoby, N.
The Peace Corps: Educational Television Project in Colombia -- Two Years of Research. Report No. 7. Improving the Effectiveness of Peace Corps Efforts to Change Teacher Behavior, November 1966.
ED 037 995

Comstock, G. & Maccoby, N.
The Peace Corps: Educational Television Project in Colombia -- Two Years of Research. Report No. 8. The Televised Curriculum and the Colombian Teacher, November 1966.

Comstock, G. & Maccoby, N.
The Peace Corps: Educational Television Project in Colombia -- Two Years of Research. Report No. 9. The Volunteers, November 1966.
ED 037 996

Comstock, G. & Maccoby, N.
The Peace Corps: Educational Television Project in Colombia -- Two Years of Research. Report No. 10. Feedback to the Peace Corps on Project Progress. Some Models and Suggestions, 1966.
ED 020 669

Comstock, G. & Maccoby, N.
The Peace Corps: Educational Television Project in Colombia -- Two Years of Research. Reports Nos. 1-10. Overview, 1966.
ED 017 185

Foote, D.
A Case Study of the ATS-6 Health, Education, and Telecommunications Projects.
ED 118149

Hornik, R.
Measurement Error and the Analysis of Panel Data.
ED 133342

Hornik, R.
Television and Educational Reform in El Salvador. Final Report.
ED 084810

Ingle, H. T.
A Basic Reference Shelf on the New Media and Teacher Training. A Series One Paper from ERIC at Stanford.
ED 019 011

Ingle, H. T. et al.
Television and Educational Reform in El Salvador. Report on the Fourth Year of Research. Research Report No. 11.
ED 077 219

Jamison, D. & Klees, S.
The Cost of Instructional Radio and Television for Developing Countries.
ED 077 213

Kreimer, O.
Open, Sesame: A Key to the Meaning of the Educational Broadcast Message.
ED 102964

Leifer, A. D. & Roberts, D. F.
Children's Responses to Television Violence.
ED 054 596

Maccoby, N.
The Peace Corps Volunteer and Achieving Educational Change with New Media.
ED 037 998

Maccoby, N.
Criteria for the Production and Selection of Film for the Classroom. A Preliminary Study.
ED 032 770

Maccoby, N.
Sound Film Recordings in Improving Classroom Communications.
ED 003 591

Markle, N.
History and Recommendations Resulting from Evaluation Planning for the Federation of Rocky Mountain States' Educational Technology Demonstration. Final Report.
ED 100406

Mayo, J. K. & Mayo, J. A.
An Administrative History of El Salvador's Education Reform. Research Report No. 8.
ED 070 255

Mayo, J.
The Mexican Telesecud Telesecundaria: A Cost-Effectiveness Analysis.
ED 076059

McAnany, E.
Studying Instructional Television: What Should Be Evaluated.
ED 114 126

McAnany, E. et al.
Television and Educational Reform in El Salvador. Complete Report on the First Year of Research.
ED 040 596

McKay, B.
The CBC and the Public.
ED 125584

McKay, B.
KQED and Its Audience.
ED 048-740

Paisley, W. et al.
Communication for Change in Education: Educational Linkage Programs in the 1970s.
ED 115 221.

Paisley, W.J.
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The films are 16mm, in color, and run about 20 minutes each.

"Satellite Housecall"

A presentation of a health-care delivery system, based on satellite-aided voice communication in village Alaska.

Purchase price: $270.00 Rental: $20.00 per day

"Access"

An overview of operational features of some large computer-based interactive information retrieval systems.

Purchase price: $270.00 Rental: $20.00 per day

"Educable"

An introduction to the educational cable television idea, and some of its promises and problems.

Purchase price: $245.00 Rental: $20.00 per day

"SPIRES/BALLOTS Report"

An introduction to Stanford's Information Retrieval and Library Automation Systems. Please consult with the Media Center on current prices.

PERSONNEL AND ORGANIZATION

The Institute for Communication Research is a division of the Department of Communication. Lyle Nelson was Chairman of the Department until September 1, 1977. Since then, Henry Breitrose has been Chairman of the Department. Nathan Maccoby is Director of the Institute. The Institute was established in 1957 and directed by Wilbur Schramm until 1973.

Other divisions of the Department provide training in journalism, broadcasting and film, and mid-career training for professional journalists. The Department provides programs leading to the B.A., M.A., and Ph.D. degrees.

Members of the Senior Staff

Nathan Maccoby, Director

Janet M. Peck
Professor of Communication until
September 1, 1977
Emeritus Professor since
September 1, 1977

Henry S. Breitrose
Professor of Communication
Chairman, Department of Communication
since September 1, 1977

Robert C. Hornik
Assistant Professof of Communication

John K. Mayo
Assistant Professor of Communication
until September 1, 1977
Now at Florida State University

Emile G. McAnany
Assistant Professor of Communication

Lyle M. Nelson
Thomas M. Storke Professor of Communication
Chairman, Department of Communication until September 1, 1977
Director, Ford Professional Journalism Program since September 1, 1977

William J. Paisley
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Professor of Communication

William L. Rivers
Paul C. Edwards Professor of Communication

Donald F. Roberts
Associate Professor of Communication

Everett M. Rogers
Professor of Communication until August 31, 1977
Janet M. Peck Professor of International Communication since September 1, 1977

Research Staff and Study Directors

Janet Alexander, M.A.
Brian Danaher, Ph.D.
Dennis Foote, Ph.D.
Robert Jeffrey, Ph.D.
Alfred L. McAlister, Ph.D. *
Anthony J. Meyer, Ph.D. **
Jeanne Moulton, Ph.D.
Joyce Nash-Jackson, Ph.D.
Linda Ormiston, Ph.D.
Peter Spain, Ph.D.
Elena Viveros, Ph.D.

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* Now Assistant Professor of Behavioral Science at the Harvard School of Public Health
** Now on leave to AID/Washington, D.C.

Student Research Assistants

(Note: The following are those supported directly by the Institute during 1976-1977. This list does not comprise all those who are enrolled in graduate studies in the Department of Communication.)

Rina Alcalay
Jeff Charles
Peter Christenson
Eduardo Contreras
David Dozier
Mereille Etaix
Marilyn Fife
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Dr. Charles Atkins
Associate Professor
Department of Communication
Michigan State University
East Lansing, Michigan

Dr. Louis Bosshart
University of Fribourg
Fribourg, Switzerland

Dr. Boris Firsov
Head
Institute of Social Problems of Mass Communication
Academy of Sciences
Leningrad, USSR

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